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ABSTRACT

This study, done at Syracuse University in 1975, investigated the multidimensional differences in freshman perceptions and experience of the academic and non-academic aspects of college associated with varying amounts of informal contact with faculty. Discriminant analysis indicated that factor dimensions, termed Interest Value, Practical Appeal and Dullness/Apathy, best distinguished between groups of freshmen categorized as high, moderate and low interactors. High interactors were characterized by more positive ratings of their academic program on all three dimensions and by more positive ratings of their non-academic life on Interest Value than were low interactors. as measured by cumulative freshman grade point average, made little difference among the three groups. Analysis of supplementary data also indicated that high interactors ranked faculty members significantly higher as a source of positive influence on their intellectual development and as a source of positive influence on their personal development than did low interactors. In a follow-up analysis of the same subjects conducted during the subsequent academic year, amount of informal contact with faculty was found to be significantly associated with persistence at the institution. (Author/MSE)

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INFORMAL INTERACTION WITH FACULTY AND FRESHMAN RATINGS OF THE ACADEMIC AND NON-ACADEMIC EXPERIENCE OF COLLEGE

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ABSTRACT

This study investigated the multidimensional differences in freshman perceptions and experience of the academic and non-academic aspects of college associated with varying amounts of informal contact with faculty. Discriminant analysis indicated that factor dimensions, termed Interest Value, Practical Appeal and Dullness/Apathy best distinguished between groups of freshmen categorized as high, moderate and low interactors. High interactors were characterized by more positive ratings of their academic program on all three dimensions and by more positive ratings of their non-academic life on Interest Value than were low interactors. Academic achievement, as measured by cumulative freshman grade point average, contributed little to discrimination among the three groups. Analysis of supplementary data also indicated that high interactors ranked faculty members significantly higher as a source of positive influence on their intellectual development and as a source of positive influence on their personal development than did low interactors. Moreover, in a follow-up analysis of the same subjects conducted during the subsequent academic year, amount of informal contact with faculty was found to be significantly associated with persistence at the institution.

A considerable body of literature in higher education has hypothesized the importance of informal interaction between faculty and students beyond the classroom as a significant factor in the impact of college on student development (e.g., Chickering, 1969; Clark, 1968; Feldman and Newcomb, 1969; Sanford, 1967). Indeed, in an early exploratory study of the impact of college teaching on student values Jacob (1957) concluded that "faculty influence appears more pronounced at institutions where associations between faculty and students are normal and frequent, and students find teachers receptive to unhurried and relaxed conversations out of class" (p. 8). However, empirical evidence substantiating differences in the experience or outcomes of college for students associated with their engaging in such interactions with faculty is far from abundant.

One not particularly positive outcome which has been established is that students' expectations of the frequency and quality of their interaction with faculty are, on the whole, seldom realized in the experience of college. For example, King (1967) in a longitudinal study of student attitudinal change at Harvard found that, while the great majority of students come to Cambridge expecting to have close interpersonal relationships with faculty, the percentage who as seniors felt they had developed such relationships had declined sharply. Similar findings have been reported by Wood and Wilson (1972). In a longitudinal study of eight institutions they found that approximately 50% of the incoming students at all eight institutions expected that "getting to know faculty members" would have a significant impact on their development during college. However, only 25% of the seniors graduating in 1970 felt that "getting to know faculty" had actually had such impact.

For that group of students who do develop close informal relationships with faculty, one possible outcome suggested by research appears to be a high degree of influence by individual faculty members on the students' career choices and aspirations for graduate education (e.g., Greely, 1962; Grigg, 1966; Gurin and Katz, 1966). More recent research by Wilson, Wood and Gaff (1974) and Wilson, et al. (1975) has attempted to deal with a number of other outcomes of college associated with informal interaction between faculty and students. Analyzing a sample drawn from eight institutions

they report that students engaging in a "high" frequency of informal interaction with faculty differ from their classmates who seldom engage in such interactions across a range of characteristics. "High interactors" not only had more intellectual, artistic and cultural interests in common with faculty to begin with, but reported having changed more during college and being more aware of themselves personally and vocationally than "low interactors." Similarly, "high interactors" were also reported as expressing greater satisfaction with their total college experience than were "low interactors."

The purpose of the present study was to extend the work of Wilson, Wood and Gaff (1974) and Wilson, et al. (1975) by means of a more focused investigation of the multidimensional differences in student perceptions of the college experience associated with varying amounts of informal contact with faculty. Specifically the study attempted to determine the extent to which freshman students who frequently engage in informal interaction with faculty beyond the classroom differ from those who do not in ratings of their academic program, ratings of their non-academic life, their participation in extracurricular programs, and their level of academic achievement. A supplementary part of the analysis focused on the degree of association between frequency of informal contact with faculty and the following: expected major, ranking of educational goals and sources of influence and satisfaction, academic aptitude, subcultural orientation toward college, and attrition rate.

METHODOLOGY

Sample

The setting for the study was Syracuse University, a large private university with a total undergraduate enrollment of approximately 10,000 students, located in Central New York State. A simple random sample of 500 freshmen was drawn by computer from the population of freshmen enrolled in the College of Arts and Sciences at that institution. The Arts and Sciences population from which the sample was drawn was approximately 54% male and 46% female, as estimated at the beginning of the spring 1975 semester.

Instrument

As a measure of their ratings of their academic program, students were asked to rate the statement "I HAVE FOUND MY ACADEMIC PROGRAM AT S.U. TO BE." on the Adjective Rating Scale (ARS) (Kelly and Greco, 1975). The ARS was also used by the student sample to respond to the statement "I HAVE FOUND MY NON-ACADEMIC LIFE AT S.U. TO BE:" The ARS consists of twenty-four adjectives (e.g., good, enjoyable, demanding, boring, useless, practical, different, interesting, dull) against which the respondent rates certain specific statements using the following four-point scale: 1 = extremely, 2 = very, 3 = somewhat, 4 = not at all. The adjectives initially selected in the development of the instrument were chosen from descriptors typically employed by students to rate the instruction received in individual undergraduate courses. A series of factor analytic studies using different methods of factor analysis indicated a stable underlying solution consisting of five factors. The internal consistency reliability of the scales derived from these factors ranged from .71-.85 (Kelly and Greco, 1975). Subsequent validational analysis indicated substantial correlations (r = .58 to .93 in magnitude) among the five factors of the ARS and the evaluation, potency and activity dimensions of the Semantic Differential (Kelly and Greco, 1975).

Additional items on the instrument asked students to indicate both the number of times during the semester they had met informally with faculty members, outside of class, for ten minutes or more and the number of organized extracurricular activities in which they had participated during the year. The questionnaire also asked students to complete a number of other items which were a supplementary part of the analysis. These were: expected major, rank-ordering of sources of personal satisfaction and influence, rank-ordering of four educational goals and four possible self-descriptions corresponding to Clark and Trow's subcultural typology. The Clark-Trow typology, based on students' orientations toward ideas and their identification with the institution, presented respondents with four statements (labeled w, x, y and z) describing different kinds of students and asked them to select the one which most closely described themselves. The four statements represented Clark-Trow's "Vocational," "Collegiate," "Academic" and "Non-Conformist" types and were drawn from Gottlieb and Hodgkins (1968). Students' level of academic

achievement was measured by their freshman year cumulative grade point average.

Response

The questionnaire was distributed by mail to the entire sample in late March 1975 (approximately 2/3 of the way through the spring semester). Subsequent to a mailed follow-up, conducted on a random sample of non-respondents approximately three weeks after the initial mailing, useable responses had been obtained from 379 subjects, yielding a response rate of 75.8%. The high rate of response, plus a chi-square analysis indicating non-significant differences between the sample and the population in terms of sex distribution suggested the representativeness of the sample.

In order to obtain comparison groups for the study, the distribution of the number of informal interactions with faculty reported by the freshman sample was divided at the 33rd and 67th percentiles. Respondents falling below the 33rd percentile were termed "low interactors," those between the 33rd and 67th percentiles were termed "moderate interactors" and those in the top 1/3 of the distribution were identified as "high interactors."

Because the number of informal interactions with faculty reported by freshmen was discrete rather than a continuous variable, separating the distribution of the 33rd and 67th percentiles did not yield equivalent numbers of subjects. One hundred forty respondents were classified as "low interactors," 131 as "moderate interactors" and 106 as "high interactors." The responses of two subjects could not be classified and were excluded from the analysis. The range of informal faculty contacts for low interactors during the semester was 0 to 1. Forty-nine percent of that group reported no informal contacts with faculty and 51% reported having had informal contact with a faculty member for ten minutes or more only once. The number of informal contacts for the moderate interactors ranged from 2 to 4 with 41% having 2 contacts, 37% having 3 contacts and 22% having 4 contacts. The number of such contacts for the high interactors ranged from 5 to 40 with the median being eight.

Statistical Analysis

Although the factor structure of the Adjective Rating Scale was previously developed on a sample of 769 subjects, the stimulus statement to which the

subjects responded pertained to specific courses (Kelly and Greco, 1975). In the present study students were being asked to rate somewhat broader experiences, i.e., the academic program and their non-academic life. It was, therefore, judged necessary to empirically determine the factor structure which held for this somewhat different use of the ARS and verify its degree of structural similarity with the original factor solution.

Analysis of the data thus began with a principal components analysis of subjects' ARS responses. A separate analysis was done for each to the two statements rated. Following Kaiser's (1959) varimax criterion, components with eigenvalues > 1.0 were extracted and subjected to varimax rotation. The rotated components will hereafter be referred to as factors. "Program Relate" (Veldman, 1967).was used to compare the structural similarity of the original solution reported by Kelly and Greco (1975) and the factor solution yielded by the use of the ARS in the present study. "Program Relate" permits the comparison of factor structures from two independent sample groups by holding one structure fixed and rotating the second structure on it until maximal similarity is achieved among the individual test vectors (test vectors in the present study are the 24 adjective scales). The degree of rotation required to achieve maximal similarity is expressed as a matrix of cosines, which may be regarded as a matrix of correlations between the two sets of factor vectors.

Mean factor scales were computed for each respondent by summing his raw scores on variables with rotated factor loadings of .40 and above on a particular factor and dividing by the number of variables. A variable which loaded above .40 on two dimensions was included in the computation of factor scales for that factor on which it had the higher loading. The purpose of computing factor scales by using characteristic variables rather than a complete estimation method (in which all variables, regardless of their factor loadings, are used) was to increase the internal consistency (alpha) reliability of the individual factor scales (Armor, 1974). At the same time, using only those variables with high loadings to compute factor scales may result in the loss of orthogonality and lead to substantial inter-scale correlations. The authors judged that it would be preferable to optimize the internal consistency reliability of each scale despite the potential loss of orthogonality since the latter situation can be dealt with effectively by

employing multivariate procedures which control for the correlations among variables, specifically discriminant analysis.

Of the 379 respondents to the study, 242 (127 men and 115 women) completed the College Characteristics Index - CCI (Pace and Stern, 1958), an 11-factor measure of environmental press, and the Activities Index - AI (Stern, Stein and Bloom, 1956), a 12-factor measure of personality needs, prior to their arrival on campus. A series of canonical analyses yielded no significant canonical correlations at $p < .05$ between students' ARS ratings of their academic program and non-academic life on the one hand and their pre-enrollment CCI and AI factor scores on the other. This evidence suggested that students' ARS ratings of their freshman academic and non-academic experience were largely independent of both their expectations of college and their personality needs.

The factor scales derived from respondents' ARS ratings of their academic program and their non-academic life were combined with the extent of their participation in extracurricular activities, and their cumulative freshman grade point average. A preliminary multivariate analysis of variance was conducted on these variables to determine the presence of overall significant differences among group mean vectors. Following this analysis the variables were employed as predictor variables in a three-group discriminant function analysis (Cooley and Lohnes, 1971) to determine which variables best distinguished among the groups identified as low, moderate, and high interactors. Subsequent to discriminant analysis, a classification analysis based on the pooled covariance matrix and individual discriminant scores was used to assess the efficacy of the discriminant function obtained. Prior probabilities for the classification were set at .333 for each group. Computer programs employed in the data analysis were "Subprogram Factor" and "Subprogram Discriminant" from the Statistical Package for the Social Sciences, Second Edition (Nie, et al., 1975), and "Program Relate" (Veldman, 1967).

RESULTS

Factor analysis of students' ARS ratings of their academic program and their ARS ratings of their non-academic life yielded five factors and four

factors respectively with eigenvalues > 1.0. The composition of these two sets of factors is shown in Tables 1 and 2. Asterisked loadings indicate those variables on each factor used to compute factor scales. Each factor has been given a tentative name which was felt to represent the underlying psychological construct tapped. The reader is cautioned, however, against attributing surplus meaning to the factors beyond the scales which characterize them.

Tables 1 and 2 also show the alpha or internal consistency reliability coefficients computed for each set of factor scales. As shown in Table 1, scales for Factor V, Uniqueness, had a computed internal consistency reliability of only .274. This dimension was therefore not included in further analysis because it was judged to be uninterpretable within the context of the statement rated.

The results of "Program Relate" indicated a high degree of structural similarity between the original Kelly and Greco (1975) factor solution and the two solutions yielded in the present study. Cosines between the original ARS factors and those derived from the present samples' ARS ratings of their academic program ranged from .87 to .97. Similar congruence was indicated between the original factors and students' ARS ratings of their non-academic life. The cosines ranged from .70 to .95.

Table 3 displays the means, standard deviations, multivariate and univariate analysis of variance F-ratios for each of the nine predictor variables. As the table shows, the multivariate analysis of variance F-ratio for differences among group mean vectors was significant at $p < .05$. Significant univariate F-ratios were found on the Interest Value and Practical Appeal factors for students' ARS ratings of both their academic program and their non-academic life. Differences between the groups in participation in extracurricular activities and cumulative grade point average were not significant. Because of the intercorrelations among the nine variables, however, the univariate tests of significance are not independent and therefore the probability statements associated with them are difficult to interpret. Since the discriminant analysis controls for the degree of association among the variables, the information it provides is more meaningful.

The results of the discriminant analysis are shown in Table 4. As

TABLE 1

VARIMAX FACTOR LOADINGS DERIVED FROM SUBJECTS' ADJECTIVE RATING SCALE RESPONSES TO THE STATEMENT "I HAVE FOUND MY ACADEMIC PROGRAM TO BE:" (N=379)

VARIABLE	I INTEREST VALUE	II DULLNESS/ APATHY	III PRACTICAL APPEAL	IV DIFFICULTY/ CHALLENGE	V UNIQUENESS	h^2
ENJOYABLE	.778*	-.120	.133	-.010	.177	.669
EXCITING	.756*	-.102	.184	.065	.240	.677
STIMULATING	.738*	-.212	.112	.039	.078	.609
ENLIGHTENING	.706*	-.102	.216	.172	.153	.608
INTERESTING	.668*	-.369	.104	.204	-.137	.654
REWARDING	.660*	-.214	.368	.042	.027	.627
GOOD	.615*	-.264	.214	.232	-.056	.551
PROVOCATIVE	.584*	-.010	.194	.063	.061	.396
INFORMATIVE	.535*	-.293	.264	.265	-.136	.530
IRRELEVANT	-.005	.753*	-.310	-.008	-.103	.673
DULL	-.393	.706*	.003	.072	-.062	.661
BORING	-.412	.658*	.039	-.067	.090	.617
USELESS	-.209	.647*	-.418	.019	-.151	.660
A WASTE	-.239	.623*	-.375	-.060	-.205	.632
NECESSARY	.159	-.084	.739*	.105	.145	.610
PRACTICAL	.352	-.179	.602*	.015	.076	.524
VALUABLE	.512	-.281	.583*	.148	-.067	.707
WORTHWHILE	.498	-.374	.513*	.068	-.053	.658
RELEVANT	.322	-.398	.442*	.124	-.135	.491
DEMANDING	.094	-.024	.069	.855*	.125	.761
DIFFICULT	.054	.111	-.025	.852*	-.027	.743
CHALLENGING	.318	-.218	.267	.687*	.137	.711
GENERAL	-.025	.386	.011	-.078	-.695*	.640
DIFFERENT	.353	.162	.202	.154	.549*	.518
EIGENVALUES (pre-rotated)	9.229	2.100	1.527	1.070	1.005	
EIGENVALUES (rotated)	5.534	3.374	2.650	2.233	1.123	
% VARIANCE	23.08	14.06	11.01	9.33	4.67	
CUM. VARIANCE	23.08	37.14	48.15	57.48	62.15	
ALPHA RELIABILITY	0.898	0.852	0.817	0.778	0.274	

NOTE: 1. VARIANCE PERCENTAGES ARE ROTATED FIGURES.

2. ASTERISKED LOADINGS INDICATE VARIABLES USED TO COMPUTE FACTOR SCALES AND ALPHA RELIABILITY COEFFICIENTS FOR EACH SCALE.

TABLE 2

VARIMAX FACTOR LOADINGS DERIVED FROM SUBJECTS' ADJECTIVE RATING SCALE RESPONSES TO THE STATEMENT "I HAVE FOUND MY NON-ACADEMIC LIFE TO BE:" (N=379)

VARIABLE	I INTEREST VALUE	II DEMAND/ CHALLENGE	III PRACTICAL APPEAL	IV UNNAMED	h^2
EXCITING	.836*	.146	.154	.001	.745
ENJOYABLE	.814*	-.052	.264	-.030	.735
GOOD	.783*	.043	.311	-.083	.718
INTERESTING	.717*	.073	.318	-.004	.621
STIMULATING	.709*	.141	.379	-.049	.668
REWARDING	.706*	.213	.345	.171	.691
ENLIGHTENING	.666*	.168	.290	.139	.576
BORING	-.633*	.173	-.194	.319	.571
WORTHWHILE	.605*	.179	.531	.074	.685
DULL	-.601*	.097	-.329	.373	.619
VALUABLE	.585*	.189	.556	.085	.694
PROVOCATIVE	.565*	.207	.240	.135	.438
DEMANDING	.128	.779*	.088	-.128	.648
CHALLENGING	.215	.745*	.181	-.020	.635
DIFFICULT	-.279	.735*	-.108	.106	.641
DIFFERENT	.294	.418*	.149	-.060	.287
IRRELEVANT	-.238	.037	-.724*	.237	.638
USELESS	-.268	-.003	-.713*	.300	.670
A WASTE	-.275	.002	-.696*	.279	.639
RELEVANT	.375	.122	.628*	.235	.604
PRACTICAL	.264	.167	.544*	.209	.438
INFORMATIVE	.391	.231	.544*	.290	.586
NECESSARY	.353	.211	.487*	.213	.452
GENERAL	.029	-.133	-.015	.698	.507
EIGENVALUES (pre-rotated)	9.969	2.113	1.278	1.147	
EIGENVALUES (rotated)	6.645	2.311	4.248	1.299	
% VARIANCE	27.66	9.60	17.70	5.45	
CUM. VARIANCE	27.66	37.20	54.90	60.35	
ALPHA RELIABILITY	0.941	0.694	0.836	———	

NOTE: 1. VARIANCE PERCENTAGES ARE ROTATED FIGURES.

2. ASTERISKED LOADINGS INDICATE VARIABLES USED TO COMPUTE FACTOR SCALES AND ALPHA RELIABILITY COEFFICIENTS FOR EACH SCALE.

TABLE 3

MEANS, STANDARD DEVIATIONS AND RESULTS OF MULTIVARIATE AND UNIVARIATE ANALYSES OF VARIANCE

Variable	Low Interactors (N = 140) MEAN	SD	Moderate Interactors (N = 131) MEAN	SD	High Interactors (N = 106) MEAN	SD	Univariate F Ratio[a]
Interest Value (Acad. Prog.)	2.71	.508	2.58	.485	2.47	.587	6.71***
Dullness/Apathy (Acad. Prog.)	3.30	.572	3.40	.447	3.41	.459	2.25
Practical/Appeal (Acad. Prog.)	2.57	.545	2.41	.529	2.35	.602	5.54***
Difficulty/Challenge (Acad. Prog.)	2.53	.564	2.45	.628	2.36	.635	2.54
Interest/Value (Non-Acad. Life)	2.24	.604	2.04	.641	2.06	.572	4.58**
Demand/Challenge (Non-Acad. Life)	2.89	.605	2.88	.555	2.79	.636	1.28
Practical Appeal (Non-Acad. Life)	1.92	.541	1.80	.542	1.76	.463	3.41*
Participation in Extra-curricular Programs	1.56	1.796	3.54	11.893	2.63	5.305	2.30
Cumulative Freshman Grade Point Average	2.48	.732	2.48	.674	2.62	.719	1.62

Multivariate F = 1.722 with 18 and 732 degrees of freedom ($p < .05$)

[a]Univariate degrees of freedom = 2 and 374

*$p < .05$

**$p < .025$

***$p < .01$

indicated, the first discriminant function based on the nine predictor variables yielded an approximate chi-square value of 19.96 with 10 degrees of freedom ($p < .05$). The second discriminant function was non-significant (approximate chi-square = 8.90 with 4 degrees of freedom, $p > .30$) and will not be discussed further. Inspection of the standardized discriminant function weights indicates that the first function was defined primarily by students' ratings of their academic program on the Interest Value and Practical Appeal factors. The weights assigned to students' ratings of their non-academic life on the Interest Value factor and their ratings of the academic program on Dullness/Apathy also suggest substantial contributions to the discriminant function by these two dimensions.

As shown in Table 3 high interactors tended to be characterized by more positive mean ratings of the academic program on Interest Value and Practical Appeal, and by more positive mean ratings of their non-academic life on Interest Value than were low interactors (recall that the ARS is scored 1 = extremely, 2 = very, 3 = somewhat, 4 = not at all). Similarly, high interactors were characterized by less negative ratings of the academic program on Dullness/Apathy than low interactors.

The centroid values for the three groups on the first discriminant function (low interactors = -.457, moderate interactors = .143, high interactors = .423) indicate a general tendency for the moderate interactors to fall between the two extreme groups. This tendency is further shown in the matrix of multivariate F-ratios for the observed differences between the individual pairs of group centroids as displayed in Table 5. The difference observed between the centroids of the low and high interactors was statistically significant. However, the respective centroid differences between the low and moderate interactors, and between the moderate and high interactors were not.

The results of the classification analysis, based on the previous discriminant analysis, are shown in Table 6. As the table indicates, 41.64% of the total sample of 377 subjects were correctly classified representing a 25% improvement over chance. Of the three groups more freshmen in the low interactors group were correctly classified (51.4%) than their classmates in the moderate or high interactor groups.

TABLE 4

STANDARDIZED DISCRIMINANT FUNCTION WEIGHTS AND TESTS OF SIGNIFICANCE FOR TWO DISCRIMINANT FUNCTIONS

VARIABLE	STANDARDIZED DISCRIMINANT FUNCTION WEIGHTS	
	FIRST FUNCTION[a]	SECOND FUNCTION[b]
INTEREST VALUE (ACAD. PROG.)	-.696	.461
DULLNESS/APATHY (ACAD. PROG.)	-.454	.261
PRACTICAL APPEAL (ACAD. PROG.)	-.697	-.164
DIFFICULTY/CHALLENGE (ACAD. PROG.)	-.192	.103
INTEREST VALUE (NON-ACAD. LIFE)	-.467	-.602
DEMAND/CHALLENGE (NON-ACAD. LIFE)	-.118	.268
PRACTICAL APPEAL (NON-ACAD. LIFE)	-.248	.314
PARTICIPATION IN EXTRACURRICULAR ACTIVITIES	.325	.373
CUMULATIVE FRESHMAN GRADE POINT AVERAGE	.271	-.216
APPROXIMATE CHI-SQUARE VALUE	19.96	8.90
DEGREES OF FREEDOM	10	8
PROBABILITY	0.05	0.35

[a]CENTROID FOR HIGH INTERACTORS = .426; CENTROID FOR MODERATE INTERACTORS = .143; CENTROID FOR LOW INTERACTORS = -.457.

[b]CENTROID FOR HIGH INTERACTORS = -.116; CENTROID FOR MODERATE INTERACTORS = .144; CENTROID FOR LOW INTERACTORS = -.047

TABLE 5

MULTIVARIATE F MATRIX FOR PAIRS OF CENTROIDS[a]

	Low Interactors	High Interactors
Moderate Interactors	1.57	
High Interactors	2.07*	1.07

[a]Degrees of Freedom = 9 and 366

*($p < .05$)

TABLE 6

PREDICTED CLASSIFICATION OF LOW, MODERATE AND HIGH INTERACTORS

ACTUAL GROUP	PREDICTED LOW INTERACTORS	PREDICTED MODERATE INTERACTORS	PREDICTED HIGH INTERACTORS
LOW INTERACTORS (N=140)	72 (51.4%)	31 (22.1%)	37 (26.4%)
MODERATE INTERACTORS (N=131)	44 (33.6%)	43 (32.8%)	44 (33.6%)
HIGH INTERACTORS (N=106)	33 (31.1%)	31 (29.2%)	42 (39.6%)

OVERALL CORRECT CLASSIFICATION FOR ALL THREE GROUPS = 41.64%

Analysis of Supplementary Data

Analysis of the supplementary data collected indicated non-significant differences between low, moderate and high interactor samples on: 1) the group distributions of respondents by sex, expected major, and Clark-Trow typology; 2) the rank-ordering of four educational goals; and 3) the means of available Scholastic Aptitude Test scores. (In the latter analysis, SAT scores were available for 97 of the low interactors, 94 of the moderate interactors and 76 of the high interactors.) However, the Kruskal-Wallace analysis of variance for the equality of distributions in ordinal data (Siegel, 1956) indicated significant differences among the three groups in three areas: 1) the rank ordering of interaction with faculty members as a source of personal satisfaction during the freshman year, 2) the rank-ordering of faculty as a source of positive influence on their intellectual development, and 3) the rank-ordering of faculty as a source of positive influence on their personal development. The comparative rankings by percentage for each analysis are shown in Table 7. As the table indicates, the largest differences in mean rankings in all three areas were between high and low interactors with moderate interactors generally falling between the two extreme groups.

In order to assess pre-enrollment differences among low, moderate and high interactors in their expectations of college and in their personality characteristics, a series of multivariate analyses of variance were conducted on the College Characteristics Index and Activities Index scores of the 242 subjects in the sample completing both instruments immediately prior to enrollment. (Scores on both instruments were available for 72 high interactors, 78 moderate interactors and 92 low interactors.) Because of sex differences in Activities Index scoring procedures, AI scores for men and women were analyzed separately. Analysis of low, moderate and high interactors' CCI scores yielded a multivariate F of .608 with 22 and 456 degrees of freedom ($p > .45$). Similarly, analysis of male AI scores yielded a multivariate F of .994 with 24 and 226 degrees of freedom ($p > .45$), while the multivariate F for the female AI analysis was 1.345 with 24 and 200 degrees of freedom ($p > .14$). Thus no reliable differences were indicated between low, moderate and high interactors either in their expectations of college, as measured by the College Characteristics Index, or in their personality characteristics, as measured by the Activities Index.

TABLE 7

COMPARATIVE RANKINGS OF FACULTY IN PERCENTAGES[a]

	Interaction Group	Rankings 1	2	3	4	5	6	Mean Ranking	Kruskal-Wallace[b] Chi-square Value
Interaction with Faculty as a Source of Satisfaction	High	3.8	12.3	28.3	22.6	25.5	5.7	3.72	
	Moderate	1.5	4.5	20.6	26.0	29.8	16.0	4.22	
	Low	0.7	3.6	14.3	22.9	25.7	31.4	4.66	30.95*
Faculty as a Source of Influence on Intellectual Development	High	14.1	44.3	29.2	12.3	---	---	2.40	
	Moderate	9.2	32.1	32.1	26.7	---	---	2.76	
	Low	6.4	35.0	25.7	32.9	---	---	2.85	18.22*
Faculty as a Source of Influence on Personal Development	High	4.7	24.5	29.2	40.6	---	---	3.04	
	Moderate	0.8	13.0	32.0	53.4	---	---	3.38	
	Low	3.6	11.4	18.6	65.7	---	---	3.45	14.31*

[a]Percentage totals may not equal 100 because of rounding and omits.

[b]Degrees of freedom = 2

*($p < .001$)

Follow-up Analysis

The subjects initially participating in the study were followed-up during the fall 1975 semester to determine if differences in rate of attrition from the institution were associated with membership in the low, moderate or high interactor groups. A subject was considered a "leaver" if he or she did not re-register for the fall 1975 semester (i.e., the first term of the sophomore year). Table 8 shows the distribution of "leavers" and "stayers" among the low, moderate and high interactors. As the table indicates, the chi-square value for the test of independence was significant at $p < .001$. The percentage of "leavers" in the low interactors group was 27.1% as opposed to 13.7% in the moderate interactors group and 9.4% in the high interactors group.

DISCUSSION

While no causal claim can be made, the results of this investigation support the hypothesis of a positive relationship between the amount of informal interaction freshman students have with faculty members and their perceptions of both their academic and non-academic experiences of college. High interactors in the study were best differentiated from low interactors on the basis of their more positive ratings of the academic program on Interest Value, Practical Appeal and Dullness/Apathy factors and their more positive ratings of their non-academic life on the Interest Value dimension.

The fact that high interactors were characterized by more positive perceptions of both their academic program and non-academic life on Interest Value than were low interactors suggests that informal faculty-student contacts beyond the classroom may be an important factor in enhancing--and perhaps integrating--the impact of the academic and non-academic experiences of college during the critical freshman year.

Moreover, high interacting freshmen also tended to rank faculty higher than did low interactors as a source of positive influence on their intellectual and personal development, and to rank interaction with faculty members higher than low interactors as a source of personal satisfaction. These findings suggest that extra-classroom contact with faculty members may serve to amplify the positive effects faculty have on students through their

TABLE 8

DISTRIBUTION OF "LEAVERS" AND "STAYERS" AMONG LOW, MODERATE, AND HIGH INTERACTOR GROUPS

	HIGH INTERACTORS	MODERATE INTERACTORS	LOW INTERACTORS	TOTAL
STAYERS	96	113	102	311
LEAVERS	10	18	38	66
TOTAL	106	131	140	377

$X^2 = 15.04$, degrees of freedom = 2, $p < .001$

more direct, instruction-related contact. The results suggest, further, that the salutary consequences of students' informal contact with faculty are multidimensional--there appear to be both cognitive and affective outcomes. It would appear that the conception of the faculty member as a role-model for students has both conceptual validity and educational usefulness for those institutions whose educational goals are more broadly conceived than simply the inculcation of knowledge or career preparation.

Perhaps equally important, the field of influence which appears to be associated with informal faculty contact was not found to be narrowly restricted to any particular sub-group of freshman students. Supplemental analyses indicate no statistically significant differences among the three groups of subjects with respect ot sex, expected major course of study, level of the academic aptitude (as measured by SAT scores), or academic achievement (as measured by cumulative freshman grade point average). Nor are there observable, significant differences among the groups with respect to their orientations toward college (as indicated by the Clark-Trow sub-cultural types), their educational goals, their expectations of college (as measured by the College Characteristics Index) or their personality characteristics (as measured by the Activities Index). This evidence suggests not only that frequent informal contact with faculty members has measurable, positive effects on freshmen, but that the benefits may accrue to a wide range of individuals.

Support for the positive institutional outcomes of informal student-faculty interaction is suggested by the significant association found between amount of informal contact with faculty and students' persistence at the institution from freshman to sophomore year. It might be hypothesized that students who are able to establish satisfying informal relationships with their teachers develop a higher level of integration into the institution's social and academic systems than their classmates who fail to establish such relationships (Tinto, 1975). Thus, the former may have a stronger personal commitment to the institution than the latter and consequently be more likely to persist--even though they may not be achieving at a significantly higher level academically.

Given the ex post facto nature of this research, however, a degree of caution should be exercised in attributing causality to informal interaction in the results of the study. Indeed, several alternative explanations for the findings may be advanced.

Many students who engage in an extensive amount of informal contact with faculty beyond the classroom may do so in large measure because they are more positively disposed to the content of their formal, in-class academic experience to begin with than are low interactors. Being more intellectually and personally stimulated by what transpires in their formal academic program, they may be more likely to seek interaction with faculty members outside of class as a means of further enhancing the personal satisfaction or stimulation they derive in the classroom. In this sense, informal interaction with faculty might act to accentuate already positive attitudes toward the academic program.

Similarly, the modest amount of group discrimination contributed by the number of extracurricular activities in which students engaged suggests that high and moderate interactors may be characterized by more positive ratings of their non-academic life on Interest Value in part because they were more actively involved in it. Students who did not enjoy their non-academic lives, which in part include informal contact with faculty members and participation in organized student activities, could not be expected to engage in such behavior. The lack of observable, statistically significant differences among the three groups with respect to their orientations to college, as measured by their self-classifications into one of the four Clark-Trow subcultural types, however, tends not to support this thesis, although that evidence is not totally persuasive.

Another alternative explanation is the possibility that the comparison groups differ significantly in personality structures. While the findings of this study do not support such an explanation, it may well be that the low and high interactors differ along personality dimensions related to their propensity to seek interaction with faculty which are largely untapped by the Activities Index. However, such an hypothesis seems more appropriate to explaining why students may choose to interact with faculty, rather than to elucidating the outcomes associated with that contact.

Quite apart from the issue of which hypothesis is the most persuasive, however, the evidence of this study has several clear implications for institutions of higher education. The positive influence of students' informal contact with faculty members supports the efforts of those institutions seeking to provide occasions for students and faculty members to interact outside the classroom. Not only may the consequences of that contact be generally

quite positive, the influence which faculty members apparently exert on students through such contact may have both cognitive and affective results. Moreover, that influence is apparently felt by students from a wide range of academic aptitudes, educational goals, orientations toward college and levels of academic achievement. More frequent contact between students and faculty members appears likely not only to induce more positive attitudes toward an institution in general, but also to result in positive personal and educational gains by the students exposed to such contact.

Furthermore, students who, by virtue of their personality make-up or for other reasons, are drawn to faculty members and enjoy that contact may be frustrated or disenchanted with an institution if that contact is denied or obstructed--whether by the personal inclinations of faculty members or because of a faculty reward system which does not recognize the educational value of faculty contact with students outside the classroom.

Much of this is speculative, and the caveat concerning causal attributions based on the findings of this research has been stated. What is less arguable, however, is the observed, progressively more positive association between the amount of informal contact students have with faculty members and those students' attitudes toward both their academic program and non-academic lives, and their tendency to persist at the institution.

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